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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/631,067	07/31/2003	Daniel James Henderson	AUS920030468US1	3488

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EXAMINER

GU, SHAWN X

ART UNIT PAPER NUMBER

2189

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/631,067	HENDERSON ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Shawn Gu	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 31 July 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☒ Claim(s) 4, 11, and 18-21 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 7/31/03 and 12/24/03 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

*RD*

### **DETAILED ACTION**

Claims 1-21 are pending.

#### ***Claim Objections***

Claim 4, 11, and 18-21 objected to because of the following informalities:

As for claims 4, 11 and 18, the claims contain obvious typographical or grammatical errors. The phrase "memory cells that are have a correctable error" should be "memory cells that have a correctable error".

As for claim 18, the claim is rejected based on the examiner's understanding that the claim was intended to depend on claim 16 instead of claim 9, as claim 9 does not disclose an apparatus.

As for claim 19, the claim is rejected based on the examiner's understanding that the claim was intended to depend on claim 18 instead of claim 11, as claim 11 does not disclose an apparatus.

As for claims 20 and 21, the claims are rejected based on the examiner's understanding that the claims were intended to depend on claim 15 instead of claim 8, as claim 8 does not disclose an apparatus.

Appropriate corrections are required.

#### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

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The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 7, 14 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

As for claims 7, 14 and 21, the term "excessive" is a relative term which renders the claims indefinite. The term "excessive" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6, 8-13 and 15-20 are rejected under U.S. C. 102(b) as being anticipated by Porter et al. [5,263,032].

As for claims 1, 8 and 15, Porter et al. discloses a method of managing memory in a computing device, comprising:

receiving a notification (Col 10, Lines 12-15; Col 14, Lines 63-65; Col 15, Lines 10-18) of a runtime correctable error associated (Fig 6, 66 and 69; Col 4, Lines 24-25; Col 5, Lines 13-14; Col 5, Lines 67-68, Col 6, Lines 1-5) with a memory cell (Col 5, Lines 64-66);

determining if the runtime correctable error has persisted for longer than one memory scrub cycle (Col 5, Lines 41-68; Col 6, Lines 1-5); and

requesting dynamic memory page deallocation for a page of memory associated with the memory cell with which the runtime correctable error is associated if the runtime correctable error has persisted for longer than one memory scrub cycle (Col 5, Lines 67-68; Col 6, Lines 1-17).

The method of claim 1 is clearly performed by Porter et al.'s apparatus (Fig 1; Fig 2; Fig 3), and its computer program product and instructions (Col 15, Lines 10-61; Fig 6; Fig 7; Fig 8).

As for claims 2, 9 and 16, Porter et al. further discloses determining if the runtime correctable error has persisted for longer than one memory scrub cycle includes:

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comparing an address of the memory cell (Col 5, Lines 48-53; Col 10, Lines 38-40; Col 11, Lines 37-51) with addresses in a history correctable error table (Col 5, Lines 67-68; Col 6, Lines 1-5; Col 11, Lines 1-3; Col 11, Lines 55-57); and

determining that the runtime error has persisted for longer than one memory scrub cycle if the address of the memory cell is found in the history correctable error table (Col 6, Lines 1-5; Col 7, Lines 64-68; Col 8, Lines 1-7).

The method of claim 2 is clearly performed by Porter et al.'s apparatus (Fig 1; Fig 2; Fig 3), and its computer program product and instructions (Col 15, Lines 10-61).

As for claims 3, 10 and 17, Porter et al. further discloses the history correctable error table is updated after each memory scrubbing operation cycle is completed (Col 11, Lines 67-68; Col 12, Lines 1-9).

The method of claim 3 is clearly performed by Porter et al.'s apparatus (Fig 1; Fig 2; Fig 3), and its computer program product and instructions (Col 15, Lines 10-61; Fig 6; Fig 7; Fig 8).

As for claims 4, 11 and 18, Porter et al. further discloses the above method comprises:

determining if the address of the memory cell is present in a current (Col 11, Lines 9-13) CE table identifying memory cells that have a correctable error identified in a current memory scrub cycle (Col 5, Lines 48-53; Col 5, Lines 67-68; Col 6, Lines 1-5;

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Col 10, Lines 38-40; Col 11, Lines 1-3; Col 11, Lines 37-51; Col 11, Lines 55-57; Col 15, Lines 23-26; Col 15, Lines 47-49); and

incrementing a count for a matching entry in the current CE table if the address of the memory cell is present in the current CE table (Col 14, Lines 8-31).

The method of claim 4 is clearly performed by Porter et al.'s apparatus (Fig 1; Fig 2; Fig 3), and its computer program product and instructions (Col 15, Lines 10-61; Fig 6; Fig 7; Fig 8).

As for claims 5, 12 and 19, Porter et al. further discloses the method above comprises:

if the address of the memory cell is not present in the current CE table, determining if the current CE table has sufficient capacity for another entry (Col 15, Lines 26-31; Col 6, Lines 51-63);

adding an entry to the current CE table corresponding to the address of the memory cell, if the current CE table has sufficient capacity (Col 15, Lines 26-31; Col 6, Lines 51-63); and

setting a count associated with the entry to 1 (Col 14, Lines 8-12).

The method of claim 5 is clearly performed by Porter et al.'s apparatus (Fig 1; Fig 2; Fig 3), and its computer program product and instructions (Col 15, Lines 10-61; Fig 6; Fig 7; Fig 8).

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As for claims 6, 13 and 20, Porter et al. further discloses the method above comprises:

comparing a total number of correctable errors to a predetermined threshold (Col 7, Lines 64-68; Col 8, Lines 1-16); and

masking off further correctable error notifications until a current memory scrub cycle completes (Col 8, Lines 33-46; Col 12, Lines 52-54; Col 6, Lines 12-17) if the total number of correctable errors is equal to or greater than the predetermined threshold (Col 7, Lines 64-68; Col 8, Lines 1-16).

The method of claim 6 is clearly performed by Porter et al.'s apparatus (Fig 1; Fig 2; Fig 3), and its computer program product and instructions (Col 15, Lines 10-61; Fig 6; Fig 7; Fig 8).

### ***Allowable Subject Matter***

Claims 7, 14 and 21 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claims and any intervening claims.



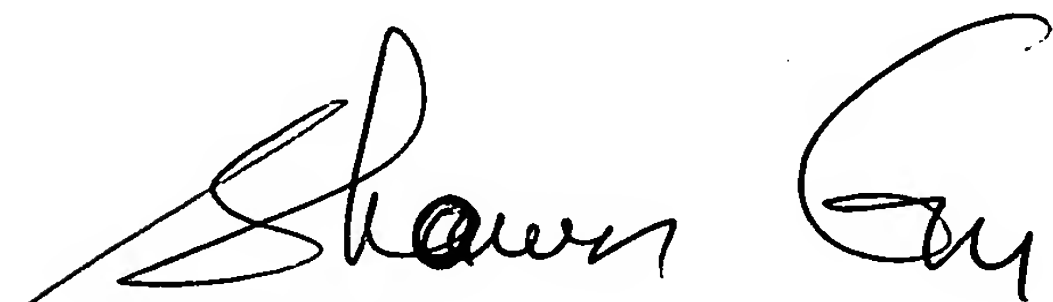
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**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shawn Gu whose telephone number is (571) 272-0703. The examiner can normally be reached on 9am-5pm, Monday through Friday.

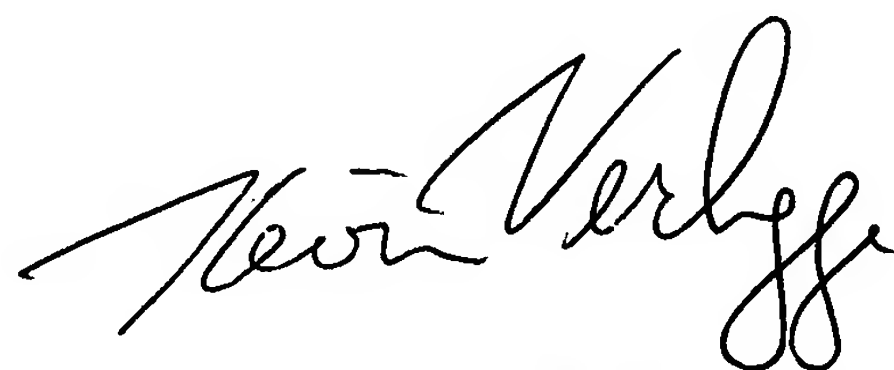
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mano Padmanabhan can be reached on (571)272-4210. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Shawn X Gu  
Assistant Examiner  
Art Unit 2189

7 October 2005



KEVIN VERBRUGGE  
PRIMARY EXAMINER